Rapid Assessment Reference Condition Model

The Rapid Assessment is a component of the LANDFIRE project. Reference condition models for the Rapid Assessment were created through a series of expert workshops and a peer-review process in 2004-2005. For more information, please visit www.landfire.gov. Please direct questions to helpdesk@landfire.gov.

Potential Natural Vegetation Group (PNVG):

R3RIPAfo **Riparian Forest with Conifers**

General Information

Contributors *(additional contributors may be listed under "Model Evolution and Comments")*

Modelers

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Vegetation Type

Forested

Dominant Species*

POAN3
POTR15
PIPU
POTR15

General Model Sources

- [ ] Literature
- [ ] Local Data
- [ ] Expert Estimate

LANDFIRE Mapping Zones

14 24 28
15 25
23 27

Rapid Assessment Model Zones

- [ ] California
- [ ] Great Basin
- [ ] Great Lakes
- [ ] Northeast
- [ ] Northern Plains
- [ ] N-Cent.Rockies
- [ ] Pacific Northwest
- [ ] South Central
- [ ] Southeast
- [ ] S. Appalachians
- [x] Southwest

Geographic Range

Common through the Rocky Mountains from southern Canada through Montana, Idaho, Wyoming, Utah, and Colorado to northern New Mexico.

Biophysical Site Description

Bottomland or toeslope landforms, also on benches with perched water tables. Soils are somewhat well-drained, fluvaquentic (water-deposited in sorted layers) for cottonwood stands, coarse to very coarse for spruce stands, intermediate in mixed stands. Often associated with a stream channel, stream gradient usually >2.5%.

Vegetation Description

Includes: 1) Riparian forest types with cottonwood alone dominant, sometimes with aspen mixed; 2) Riparian forest types with cottonwood mixed with spruce; 3) Riparian forest types dominated by spruce alone. "Spruce" is usually blue spruce at middle elevations in the mountains in this geographic region, but may include Engelmann spruce or hybrid spruce (PIEN x PIGL) farther north or at upper elevations. "Cottonwood" is often narrowleaf cottonwood throughout the Rockies, but may also include the stable hybrid between narroleaf and one of the broadleaf cottonwoods (Populus acuminata on the eastern slope in Colorado); may also include Populus trichocarpa to the north of this region. In cottonwood stands, willows include Pacific willow (SALUL) and several others; there are many other shrub, graminoid, and forb species that may be prominent in this type, not possible to list them all here. Willow riparian and herbaceous wetlands must be modeled separately -- they would have very different reference fire regimes.

Disturbance Description

In spruce stands, "hot crown fires occur over long intervals, perhaps 300-400 yr" (Johnston et al. 2001). In cottonwood stands, fire does not often occur, but hot fires carrying through adjacent tree stands can top-kill cottonwood stands (Schoonover Fire of 2002).

*Dominant and Indicator Species are from the NRCS PLANTS database. To check a species code, please visit http://plants.usda.gov.

Adjacency or Identification Concerns

Scale Description

Sources of Scale Data ☑ Literature ☑ Local Data ☑ Expert Estimate

Long, narrow or narrow-oblong sites, varying from 0.1-2 mi wide.

Issues/Problems

Model Evolution and Comments

Peer review agreed with model parameters.

Succession Classes

Succession classes are the equivalent of "Vegetation Fuel Classes" as defined in the Interagency FRCC Guidebook (www.frcc.gov).

Class A 15%

Early1 PostRep

Description

Willows, serviceberry, alder, snowberry, other shrubs, seedlings-saplings of cottonwood and/or spruce. Or pole-sized tree stand with shrubs or not.

Indicator Species* and Canopy Position

ALINT
SALIX
AMELA2

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	%	%
Height	no data	no data
Tree Size Class	no data	

☐ Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

Class B 5%

Mid1 Closed

Description

Tall, closed-canopy cottonwood stand, with depleted shrubs: no tall shrubs and shorter shrubs all unpalatable or resistant.

Indicator Species* and Canopy Position

POAN3
SYMPH

ROWO

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	%
Height	no data	no data
Tree Size Class	no data	

☐ Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

Class C 15%

Mid2 Cwood-Spruce

Description

Mixed cottonwood and spruce stand, with cottonwood >40% of tallest layer; or cottonwood 40-60% alone.

Indicator Species* and Canopy Position

POAN3
PIPU
PIEN

Upper Layer Lifeform

☐ Herbaceous
☐ Shrub
☐ Tree

Fuel Model no data

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	%
Height	no data	no data
Tree Size Class	no data	

☐ Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

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*Dominant and Indicator Species are from the NRCS PLANTS database. To check a species code, please visit http://plants.usda.gov.

Class D 35 %

Late1 Closed

Description

Late-seral closed-canopy (>60%) cottonwood stand, with several layers of shrubs.

Indicator Species* and Canopy Position

POAN3
SALIX

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	%
Height	no data	no data
Tree Size Class	no data	

Upper Layer Lifeform

- ☐ Herbaceous
- ☐ Shrub
- ☐ Tree

☐ Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

Fuel Model no data

Class E 30 %

Late2 Closed

Description

Late-seral closed-canopy (>60% cover) spruce stand, sometimes with some tall or medium shrubs in patches in the stand (dogwood, alder, honeysuckle).

Indicator Species* and Canopy Position

PIPU
SWSE
ALINT

Structure Data (for upper layer lifeform)

	Min	Max
Cover	0 %	%
Height	no data	no data
Tree Size Class	no data	

Upper Layer Lifeform

- ☐ Herbaceous
- ☐ Shrub
- ☐ Tree

☐ Upper layer lifeform differs from dominant lifeform. Height and cover of dominant lifeform are:

Fuel Model no data

Disturbances

Non-Fire Disturbances Modeled

- ☑ Insects/Disease
- ☐ Wind/Weather/Stress
- ☑ Native Grazing
- ☐ Competition
- ☐ Other:
- ☐ Other:

Fire Regime Group: 5

I: 0-35 year frequency, low and mixed severity
II: 0-35 year frequency, replacement severity
III: 35-200 year frequency, low and mixed severity
IV: 35-200 year frequency, replacement severity
V: 200+ year frequency, replacement severity

Historical Fire Size (acres)

Avg:
Min:
Max:

Fire Intervals (FI):

Fire interval is expressed in years for each fire severity class and for all types of fire combined (All Fires). Average FI is the central tendency modeled. Minimum and maximum show the relative range of fire intervals, if known. Probability is the inverse of fire interval in years and is used in reference condition modeling. Percent of all fires is the percent of all fires in that severity class. All values are estimates and not precise.

Sources of Fire Regime Data

- ☑ Literature
- ☑ Local Data
- ☑ Expert Estimate

	Avg FI	*Min FI*	*Max FI*	*Probability*	*Percent of All Fires*
Replacement	435	300	550	0.0023	99
Mixed					
Surface					
All Fires	435			0.00232	

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References

De Velice, Robert L.; John A. Ludwig; William H. Moir; and Frank Ronco, Jr. 1986. A classification of forest habitat types of northern New Mexico and southern Colorado. General Technical Report RM-131, 59 pp. Fort Collins, CO: USDA Forest Service, Rocky Mountain Forest and Range Experiment Station.

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Johnston, Barry C.; Laurie Huckaby; Terry J. Hughes; and Joseph Pecor. 2001. Ecological types of the Upper Gunnison Basin: Vegetation-Soil-Landform-Geology-Climate-Water land classes for natural resource management. Technical Report R2-RR-2001-01, 858 pp. Lakewood, CO: USDA Forest Serv ice, Rocky Mountain Region.

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